

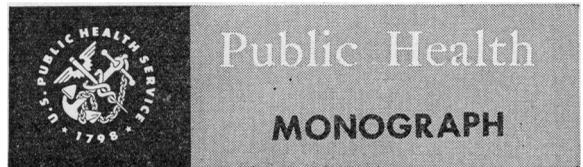
The Movement of Patients to Obtain Physician Care

Knowledge of the extent to which persons seek medical care outside their own communities, and of the patterns of travel they follow in so doing, is required for an accurate evaluation of the relative number of physicians, hospital beds, and other health resources available to a community.

The need to obtain such knowledge economically and quickly when a community is confronted with the problem of withdrawal of physicians and allied personnel from communities in time of military mobilization prompted the National Security Resources Board to sponsor a pilot study to explore methods for delineating medical service areas—geographic areas involved in the pattern of intercommunity movement of persons seeking medical care. The study was carried out by the Public Health Service and the Graduate School of Public Health, University of Pittsburgh. Two reports of the findings of the study appear in Public Health Monograph No. 19.

Medical Service Areas

The study covered the 29 westernmost counties of Pennsylvania. Part I of the monograph deals with medical service areas. County and State lines were followed in delineating these areas since the intended application of the findings, as a ready and economical aid in the procurement and assignment of medical personnel for military and defense purposes, would involve the coordination and cooperation of groups organized on a county or State basis as well as the use of readily available statistical data which are similarly organized.



No. 19

The accompanying summary covers the principal findings presented in Public Health Monograph No. 19. The senior author, formerly deputy chief of the Division of Public Health Methods, Public Health Service, is head of the department of biostatistics, University of Pittsburgh Graduate School of Public Health. The junior author, on leave from the division, is the statistician for the Commission on Financing of Hospital Care.

Readers wishing the data in full may purchase copies of the monograph from the Superintendent of Documents, United States Government Printing Office, Washington 25, D. C. A limited number of free copies are available to official agencies and others directly concerned on specific request to the Public Inquiries Branch of the Public Health Service. Copies will be found also in the libraries of professional schools and the the major universities and in selected public libraries.

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Ciocco, Antonio, and Altman, Isidore: Medical service areas and distances traveled for physician care in western Pennsylvania. Public Health Monograph No. 19 (Public Health Service Publication No. 248). 32 pages. Illustrations. U. S. Government Printing Office, Washington, 1954.

A medical service area is defined as one which is more or less self-sufficient with respect to the utilization of health resources by its population, either because these resources are adequate or because of factors which discourage any appreciable movement out of the area for services. The essential element which determines a medical service area is the dependence of the population of one political unit on the medical facilities and personnel available in another.

Data were obtained on the size of practice and source of patients of active private practitioners in the study region, the distribution of hospital patients by place of residence, and the distribution of births by place of occurrence and by place of residence of the mother. In addition, as a direct means of gaining information on the extent and direction of the movement of persons from one community to another to obtain medical care, a household canvass was carried out on a sample of the population in 10 counties.

From these data three indexes were calculated: The proportion of patients resident in one county seen by physicians of another county; the proportion of hospitalized persons resident in one county hospitalized in another; and the proportion of babies born in counties other than the residence of the mother. Each of these indexes is considered a measure of one aspect of intercounty movement for medical care: the first, for physician care; the second, for hospital care; the third, for maternity care.

One of the major findings of the study is that the three indexes are highly correlated with each other. On the basis of these indexes, the direction and intensity of the crossing of county lines in the area studied were examined. A measure of dependency of one county on another was determined empirically and employed as the criterion for grouping counties tentatively into medical service areas. The areas so defined by the three indexes were found not only to agree rather well with each other but also with the delineations published by others.

These results indicate that, when more exact delineations are not required, medical service

areas can be determined from data which are easily, quickly, and cheaply obtained.

Distances Traveled for Medical Care

Part II of the monograph deals with the distances traveled to obtain the services of physicians. The analysis is based on data from physician questionnaires. The objective was to study any association between the distance traveled to the physician and the frequency with which he is seen.

The questionnaires sent to physicians requested, among other items, the distribution of patients seen in one day, by place of residence, in order that the distances traveled by patients could be measured. A total of 20,100 visits was reported, permitting a detailed examination of the relationship between the distances traveled to the general practitioner and to the specialist and several factors which, a priori, might be expected to be associated with distance.

For each type of county, the frequencies with which different distances were traveled for the different types of practitioner could be described by a hyperbolic curve of form $y = a/x^b$ with a fair degree of approximation. The frequency (y) with which visits to the general practitioner, regardless of type of county, and to the specialist in the greater metropolitan county (containing Pittsburgh) were observed varied inversely as some value (b) between the square and the cube of the distance traveled (x). For the remaining types of counties, the value of the exponent (b) decreased for the specialists as the counties became less urban in character, indicating that relatively more persons were traveling greater distances.

In western Pennsylvania, where distribution of general practitioners within the individual counties is fairly uniform, the average distance traveled to these practitioners varied little between urban and rural counties. To obtain the services of specialists, however, the residents of the more rural counties often traveled long distances and, accordingly, they saw specialists much less frequently than did the residents of other counties.